

**EPA REGION VIII MONTANA OFFICE TMDL REVIEW FORM**

<b>Document Name:</b>	<b>Water Quality Assessment and TMDLs for the Flathead River Headwaters Planning Area, Montana</b>
<b>Submitted by:</b>	<b>MTDEQ</b>
<b>Date Received:</b>	<b>March 2, 2005</b>
<b>Review Date:</b>	<b>April 29, 2005</b>
<b>Reviewer:</b>	<b>Ron Steg</b>
<b>Formal or Informal Review?</b>	<b>FORMAL</b>

This document provides a standard format for the EPA Montana Office to provide comments to the Montana Department of Environmental Quality on TMDL documents provided to the EPA for either official formal, or informal review. All TMDL documents are measured against the following 12 review criteria:

1. Water Quality Impairment Status
2. Water Quality Standards
3. Water Quality Targets
4. Significant Sources
5. Total Maximum Daily Load
6. Allocation
7. Margin of Safety and Seasonality
8. Monitoring Strategy
9. Restoration Strategy
10. Public Participation
11. Endangered Species Act Compliance
12. Technical Analysis

Each of the 12 review criteria are described below to provide the rational for the review, followed by EPA's summary and comments/questions. **Comments/questions that need to be addressed are presented in bold.** This review is intended to ensure compliance with the Clean Water Act and also to ensure that the reviewed documents are technically sound and the conclusions are technically defensible.

## 1. Water Quality Impairment Status

### *Criterion Description – Water Quality Impairment Status*

*TMDL documents must include a description of the listed water quality impairments. While the 303(d) list identifies probable causes and sources of water quality impairments, the information contained in the 303(d) list is generally not sufficiently detailed to provide the reader with an adequate understanding of the impairments. TMDL documents should include a thorough description/summary of all available water quality data such that the water quality impairments are clearly defined and linked to the impaired beneficial uses and/or appropriate water quality standards.*

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
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The following seven individual water body/pollutant combinations were addressed by demonstrating that they currently meet water quality standards (WQS):

- Red Meadow Creek (listed for siltation, meeting WQS)
- Whale Creek (listed for siltation, meeting WQS)
- South Fork Coal Creek (listed for siltation, meeting WQS)
- North Fork Coal Creek (listed for siltation and nutrients, meeting WQS for siltation, proposed plan to collect additional data regarding nutrients)
- Granite Creek (listed for siltation, meeting WQS)
- Skyland Creek (listed for siltation, meeting WQS)
- Morrison Creek (listed for siltation, meeting WQS)

It was determined that Lower Coal Creek (listed for siltation) is not currently meeting the narrative criteria for sediment. Therefore, a TMDL has been prepared.

Because a watershed-scale approach was taken, the following waters were also considered in the analyses. They were not addressed because they were found to be fully supporting on the 2002 303(d) list, all necessary TMDLs have already been completed, or the waters were not listed for a pollutant:

- South Fork Flathead River (flow and habitat alteration, no pollutants)
- Hungry Horse Reservoir (fully supporting on 2002 303(d) list)
- Big Creek (TMDL approved May 9, 2003)
- Challenge Creek (fully supporting on 2002 303(d) list)

## 2. Water Quality Standards

### *Criterion Description – Water Quality Standards*

*The TMDL document must include a description of all applicable water quality standards for all affected jurisdictions. TMDLs result in maintaining and attaining water quality standards. Water quality standards are the basis from which TMDL's are established and the TMDL targets are derived, including the numeric, narrative, use classification, and antidegradation components of the standards.*

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The applicable water quality standards are adequately summarized in Section 3.2.

### 3. Water Quality Targets

#### Criterion Description – Water Quality Targets

*Quantified targets or endpoints must be provided to address each listed pollutant/water body combination. Target values must represent achievement of applicable water quality standards and support of associated beneficial uses. For pollutants with numeric water quality standards, the numeric criteria are generally used as the TMDL target. For pollutants with narrative standards, the narrative standard must be translated into a measurable value. At a minimum, one target is required for each pollutant/water body combination. It is generally desirable, however, to include several targets that represent achievement of the standard and support of beneficial uses (e.g., for a sediment impairment issue it may be appropriate to include targets representing water column sediment such as TSS, embeddeness, stream morphology, up-slope conditions, and a measure of biota).*

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A suite of targets and supplemental indicators were selected including:

#### Targets

% Subsurface Fines < 6.35 mm  
Substrate Scores  
% Surface Fines < 2mm  
Clinger Richness

#### Supplemental Indicators

Trout population density  
SSC concentration  
Turbidity  
Pfankuch scores  
Macroinvertebrate IBIs  
% Clinger taxa  
Periphyton Siltation Index  
Fire (area, age)  
ECA  
Water yield  
Roads (density, # of stream crossings)

The full suite of targets and supplemental indicators were used to verify compliance with the narrative sediment criteria and determine which water body/pollutant combinations required TMDLs. The target values will be used in the future to determine if implementation of this TMDL is successful.

#### 4. Significant Sources

##### ***Criterion Description – Significant Sources***

*TMDLs must consider all significant sources of the stressor of concern. All sources or causes of the stressor must be identified or accounted for in some manner. The detail provided in the source assessment step drives the rigor of the allocation step. In other words, it is only possible to specifically allocate quantifiable loads or load reductions to each significant source when the relative load contribution from each source has been estimated. Ideally, therefore, the pollutant load from each significant source should be quantified. This can be accomplished using site-specific monitoring data, modeling, or application of other assessment techniques. If insufficient time or resources are available to accomplish this step, a phased/adaptive management approach can be employed so long as the approach is clearly defined in the document.*

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Sources of sediment considered in this analysis include: roads, harvest, water yield, bank erosion, mass wasting, natural background, and stream down-cutting.

#### 5. TMDL

##### ***Criterion Description – Total Maximum Daily Load***

*TMDLs include a quantified pollutant reduction target. According to EPA reg (see 40 C.F.R. 130.2(i)) TMDLs can be expressed as mass per unit of time, toxicity, % load reduction, or other measure. TMDLs must address, either singly or in combination, each listed pollutant/water body combination.*

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The TMDL is expressed as the sum of the allocations to nonpoint sources resulting from historic and current anthropogenic activities. This results in an approximate 99% reduction in sediment loads from the known, current human-caused sediment sources.

## 6. Allocation

### Criterion Description – Allocation

*TMDLs apportion responsibility for taking actions or allocate the available assimilative capacity among the various point, nonpoint, and natural pollutant sources. Allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing of responsibility. A performance based allocation approach, where a detailed strategy is articulated for the application of BMPs, may also be appropriate for non point sources.*

*In cases where there is substantial uncertainty regarding the linkage between the proposed allocations and achievement of water quality standards, it may be necessary to employ a phased or adaptive management approach (e.g., establish a monitoring plan to determine if the proposed allocations are, in fact, leading to the desired water quality improvements).*

*Allocating load reductions to specific sources is generally the most contentious and politically sensitive component of the TMDL process. It is also the step in the process where management direction is provided to actually achieve the desired load reductions. In many ways, it is a prioritization of restoration activities that need to occur to restore water quality. For these reasons, every effort should be made to be as detailed as possible and also, to base all conclusions on the best available scientific principles.*

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The proposed allocations are as follows:

- 75% reduction in loading from roads
- 100% reduction in loading from historic/current forest harvest
- 90% reduction in loading from human-caused bank erosion...

A performance-based allocation to future sources is also proposed as well as additional (“Phase II”) study to identify other potentially significant sources.

## 7. Margin of Safety and Seasonality

### Criterion Description – Margin of Safety/Seasonality

*A margin of safety (MOS) is a required component of the TMDL that accounts for the uncertainty about the relationship between the pollutant loads and the quality of the receiving water body (303(d)(1)(c)). The MOS can be implicitly expressed by incorporating a margin of safety into conservative assumptions used to develop the TMDL. In other cases, the MOS can be built in as a separate component of the TMDL (in this case, quantitatively, a  $TMDL = WLA + LA + MOS$ ). In all cases, specific documentation describing the rationale for the MOS is required.*

*Seasonal considerations, such as critical flow periods (high flow, low flow), also need to be considered when establishing TMDLs, targets, and allocations.*

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Based on the available data evaluated in Section 3.4.1.7 and consideration of the fact that the majority of the sediment load delivered to Coal Creek appears to be largely of natural origin, one could argue that no TMDL is necessary for Lower Coal Creek. To be conservative and err on the side of water quality protection, a TMDL has been prepared. In the case of Lower Coal Creek, this fact alone provides a substantial margin of safety.

The phased allocation approach also provides a margin of safety by addressing the uncertainties regarding the identification/quantification of sediment sources outlined in Section 4.1 and by providing for additional study to better understand the potential causes of the bull trout decline. A 319-grant has been awarded to initiate this study in 2005/2006.

## 8. Monitoring Strategy

### Criterion Description – Monitoring Strategy

*Many TMDL's are likely to have significant uncertainty associated with selection of appropriate numeric targets and estimates of source loadings and assimilative capacity. In these cases, a phased TMDL approach may be necessary. For Phased TMDLs, it is EPA's expectation that a monitoring plan will be included as a component of the TMDL documents to articulate the means by which the TMDL will be evaluated in the field, and to provide supplemental data in the future to address any uncertainties that may exist when the document is prepared.*

*At a minimum, the monitoring strategy should:*

- Articulate the monitoring hypothesis and explain how the monitoring plan will test it.*
- Address the relationships between the monitoring plan and the various components of the TMDL (targets, sources, allocations, etc.).*
- Explain any assumptions used.*
- Describe monitoring methods.*
- Define monitoring locations and frequencies, and list the responsible parties.*

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A conceptual monitoring strategy was included to provide answers to the following questions:

1. Has implementation of this plan resulted in attainment of water quality standards and full support of the cold-water fishery beneficial use? (i.e., trend and compliance monitoring)
2. Have all the significant anthropogenic sediment sources been identified? (supplemental monitoring)
3. Are other factors such as physical habitat limitations, stream channel morphology, and fish barriers having a significant negative impact on bull trout in Coal Creek? (supplemental monitoring)
4. Is North Fork Coal Creek impaired because of excessive anthropogenic nutrient loading? (North Fork Nutrient Assessment).



## 9. Restoration Strategy

### Criterion Description – Restoration Strategy

*At a minimum, sufficient information should be provided in the TMDL document to demonstrate that if the TMDL were implemented, water quality standards would be attained or maintained. Adding additional detail regarding the proposed approach for the restoration of water quality is not currently a regulatory requirement, but is considered a value added component of a TMDL document.*

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A detailed conceptual restoration strategy is provided and a local watershed stakeholder group has applied for, and has been awarded, a 319 grant to implement it.

## 10. Public Participation

### Criterion Description – Public Participation

*The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process. Public participation should fit the needs of the particular TMDL.*

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The level of public participation was considered adequate. A 30-day public comment period was then initiated on October 20, 2004. This final document reflects DEQ's responses to all public comment.

## 11. Technical Analysis

### Criterion Description – Technical Analysis

*TMDLs must be supported by an appropriate level of technical analysis. It applies to **all** of the components of a TMDL document. It is vitally important that the technical basis for **all** conclusions be articulated in a manner that is easily understandable and readily apparent to the reader. Of particular importance, the cause and effect relationship between the pollutant and impairment and between the selected targets, sources, TMDLs, and allocations needs to be supported by an appropriate level of technical analysis.*

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An appropriate level of technical analysis has been conducted. The water quality impairment determination was based on consideration of multiple indicators and consideration of potential sediment loading from anthropogenic sources. The TMDL and allocations address the controllable sources and, if implemented, they would likely result in achievement of the narrative criteria for sediment and full support of fish and aquatic life.

## 12. Endangered Species Act Compliance

### Criterion Description – Endangered Species Act Compliance

*EPA's approval of a TMDL may constitute an action subject to the provisions of Section 7 of the Endangered Species Act ("ESA"). EPA will consult, as appropriate, with the US Fish and Wildlife Service (USFWS) to determine if there is an effect on listed endangered and threatened species pertaining to EPA's approval of the TMDL. The responsibility to consult with the USFWS lies with EPA and is not a requirement under the Clean Water Act for approving TMDLs. States are encouraged, however, to participate with FWS and EPA in the consultation process and, most importantly, to document in its TMDLs the potential effects (adverse or beneficial) the TMDL may have on listed as well as candidate and proposed species under the ESA.*

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EPA will address ESA issues.